

REMARKS

Upon entry of the present amendment, claim 1 will have been amended, claims 2-24 will have been canceled without prejudice or disclaimer to the subject matter recited therein, and claims 25-38 will have been added for consideration by the Examiner. In view of the herein contained amendments, newly added claims and remarks, Applicants respectfully request reconsideration and withdrawal of each of the outstanding rejections, as well as an indication of the allowability of each of the claims now pending, in due course.

In the outstanding Official Action, claims 1 and 2 were rejected under 35 U.S.C. §102(e) over BOHACEK et al. (U.S. Patent No. 6,411,687). Claims 3-24 were rejected under 35 U.S.C. §103(a) over BOHACEK in view of WHITT (U.S. Patent No. 6,330,326) and CARPENTER et al. (U.S. Patent No. 6,269,153).

Applicants respectfully traverse each of the outstanding rejections. In this regard, Applicants note that claims 1 and 25-38 recite features similar to the features recited in claims 1-24 as originally presented. However, claim 1 has been amended, and the new claims have been added, to clarify the features of the present invention.

In view of the herein contained remarks, Applicants respectfully submit that the outstanding Official Action does not set forth a sufficient or proper motivation to combine the teachings of the applied references. Furthermore, Applicants assert that even if the combination of references applied by the Examiner was proper, the combination of references does not disclose or suggest the invention recited in the claims now pending.

Initially, Applicants assert that the rejections set forth in the outstanding Official Action do not provide any adequate or proper motivation to modify the teachings of BOHACEK with the teachings of WHITT and/or CARPENTER. The U.S. Court of Appeals for the Federal Circuit has stated that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification". See *In re Fritch*, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992). In this regard, the outstanding Official Action asserts, at page 3, that it would have been obvious "to use the conditional probabilities wherever it was deemed necessary" and "to use conditional probabilities as taught by Whitt and max and min values as taught by Carpenter in the Bohacek et al. method as such notoriously well known math means and would only entail the substitution of one math means for another". Additionally, the outstanding Official Action does not even assert any motivation to make other supposed obvious modifications to BOHACEK, with respect to, e.g., claims 13, 17, 21, 24.

Applicants respectfully submit that "wherever it was deemed necessary" is not a proper showing of motivation to modify BOHACEK, at least because there is no indication that BOHACEK deems it necessary to "use conditional probabilities". Furthermore, the implication that "well known math means" can be substituted at will between patent specifications, is a proposition that is wholly unsupported by court decisions or the Federal laws.

Additionally, Applicants note that BOHACEK discloses a "device for routing callers identified as having ... characteristics... to predetermined attendant stations" (see the Abstract). WHITT discloses "future staffing requirements of [a] service system are predicted by determining, of a number of customers currently in service, how many will remain in service at a predetermined future time and how many customers to arrive to the system in the future can be expected to remain in service". Furthermore, WHITT discloses "customers may be classified according to one or more known attributes known for the customer... to identify a type of service being provided... and determine a remaining service time" (see the Abstract and column 4, lines 39-67).

Accordingly, Applicants respectfully submit that WHITT does not disclose or suggest using customer characteristics in any way to route calls. Moreover, WHITT does not relate in any way to call routing. Applicants additionally submit that there is no nexus between the teachings of BOHACEK and WHITT, or any invitation (i.e., motivation) in BOHACEK to modify the disclosure therein, that would lead to a proper and sufficient reason to combine the teachings of the cited references in a manner that would relate to the invention recited in the pending claims.

Because the outstanding Official Action asserts no motivation, or an insufficient and improper motivation, to modify the teachings of BOHACEK, Applicants respectfully assert that no proper motivation exists to combine the teachings of BOHACEK with, e.g., the teachings of WHITT. Accordingly, Applicants respectfully request, should the Patent and

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Trademark Office continue to maintain that a motivation is provided in BOHACEK to modify the teachings thereof, that the Examiner explicitly set forth the specific motivation to modify the disclosure of BOHACEK with respect to each and every modification made to the disclosure of BOHACEK in any assertion that the combination of the applied references discloses or suggests the presently claimed invention. Without such a showing of proper and sufficient motivation, Applicants submit that no such motivation exists, except as an attempt to reconstruct the features of the presently claimed invention, in hindsight.

Separate from the arguments set forth above, Applicants further assert that even the combination of the applied references does not disclose or suggest the invention recited in the pending claims. In this regard, the outstanding Official Action asserts that BOHACEK "teaches... performing... a predicate analysis" at the "word detector 7 and columns 2, lines 54-56". Applicants respectfully submit that the Official Action is in error. For example, BOHACEK discloses at Figure 1 and column 2, lines 54-56, a "Word Detector 7" that "carries out key word recognition of specific words that would indicate annoyance or impatience". Additionally, a "speaker independent... device extracts these features and feeds them to a neural net device which computes the caller's potential annoyance or impatience" (see column 2, lines 58-61). Applicants additionally note that BOHACEK also discloses a "speaker characteristic unit 8" to monitor the caller's voice and "determine... approximate age and sex of the caller" and "to determine if the caller has a strong accent" (see column 3, lines 1-9). However, Applicants submit that the above-noted features of BOHACEK do not

disclose or suggest a "predicate analysis on the customer's request" as is recited in independent claims 1 and 34.

In particular, a "predicate" is defined by, for example, the McGraw Hill Dictionary of Scientific and Technical Terms, Fifth Edition, as "[a] function of one or more variables which takes the values "true" or "false"". Additionally, an "analysis" is defined by, for example, the Webster's New World Dictionary of the American Language, Modern Desk Edition, as "a breaking up of a whole into its parts to find out their nature, etc".

Applicants respectfully submit that, while the "word detector 7" and the "speaker characteristic unit" of BOHACEK may perform a function of determining whether a word is recognized as one that indicates "annoyance" or "impatience", or determining an age, sex and language preference of a caller, neither is disclosed to perform a "predicate analysis", let alone a "predicate analysis on the customer's request" as is recited in claims 1 and 34.

Furthermore, Applicants respectfully submit that a predicate analysis is only one of many methods that could be employed by BOHACEK to compute a "caller's potential annoyance or impatience" or the age, sex and language preference of the caller. However, BOHACEK does not disclose or even suggest that a predicate analysis is the method used to produce such a computation.

In this regard, a predicate analysis is an analysis of, i.e., the "customer's request", and not merely a detection of a particular word or words. As an example of the predicate analysis that would be used in the context of the claimed invention, the present specification discloses

at, for example, page 13, line 20 to page 14, line 2, that the predicate analysis would be based on analyses including "the key words the customer uses, the specific types(e.g., verb, object, etc.) of words the customer uses, the language components, etc". Accordingly, while the "word detector 7" of BOHACEK might be used to recognize a word and the "speaker characteristic unit" of BOHACEK might be used to recognize a language preference, upon which a predicate analysis might be based in part, the "word detector 7" and/or the speaker characteristic unit 8 of BOHACEK are not disclosed to perform such a predicate analysis consistent with the meaning thereof as would be understood by one of ordinary skill in the art. Nor is there any disclosure or suggestion that a "neural network", e.g., a feedback network which learns from experience, performs an analysis other than, determining whether a word or, e.g., language characteristic is, in fact, indicative of annoyance or impatience.

In addition to the reasons set forth above for the patentability of the pending claims, Applicants further submit that the use of other "parameters" in BOHACEK does not disclose or suggest the above-noted features of claims 1 and 34. For example, BOHACEK discloses measuring "frequency spectrum, to determine the approximate age and sex of the caller" (column 3, lines 3-4); and the "mood analyzer 3" (column 3, lines 60-65) that "can measure many parameters, such as: indication of stress in the speech, very rapid response to questions, added words... that indicate moods, phonemes that only occur in other languages... rapid pushing of touch-tone buttons, or very long pushing of touch-tone buttons" (column 4, lines 9-23). However, none of the measurements or determinations is disclosed as occurring in

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relation to a "predicate analysis" as would be understood by one of ordinary skill in the art. Nor has the outstanding Official Action asserted with any particularity that any of these features of BOHACEK disclose or suggest the features recited in claim 1. For these reasons, Applicants respectfully assert that the "predicate analysis on the customer's request", recited in each of claims 1 and 34, is not disclosed or suggested by BOHACEK.

Furthermore, the outstanding Official Action also asserts with respect to the teachings of BOHACEK that "with respect to the customer goals, such is inherent". In this regard, the Examiner is requested to review MPEP Section 2112 regarding the burden of proof and requirements of a rejection based on inherency. In particular, under these guidelines, the Examiner must provide rationale or evidence tending to show that the missing descriptive matter is "necessarily" present in the reference. "Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates." MEHL/Biophile Int'l Corp. v. Milgraum, 52 USPQ2d 1303, 1305 (Fed. Cir. 1999). However, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (emphasis in original). "To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances

is not sufficient.' " In re Robertson, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

In view of the above-noted requirements repeatedly set forth by the Federal courts, Applicants respectfully submit that identifying "a goal category for the customer" and relating "the customer request to customer goal categories" are not inherent. Rather, many alternative logical algorithmic methods may be used to analyze data that is detected by, e.g., a word detector, assuming that a logical analysis method is used at all beyond the word detector. Furthermore, it is not necessary to identify a "goal category" or to "relate the customer request to customer goal categories" using the detected words in BOHACEK, at least insofar as the ultimate teaching of BOHACEK is to route calls based upon a "mood" detected by a "mood logic unit 4". In this regard, a customer may have a "goal" of placing an order, whether the customer is in, e.g., a good mood or a bad mood that is determined by the mood logic unit 4. Furthermore, the customer may have a "goal" of, e.g., making a suggestion, whether the customer is in, e.g., a good mood or a bad mood. BOHACEK is not concerned with the goal because BOHACEK routes calls based on the identified "mood" of the customer. Accordingly, Applicants respectfully submit that identifying a "goal" of a customer is not inherent in the system disclosed in BOHACEK.

In any case, even if the reasons for the allowability of the pending claims set forth above were not valid, Applicants have amended claim 1 to additionally clarify the "predicate analysis" feature recited therein. In this regard, amended claim 1 recites features previously recited in, e.g., claim 3 and claim 4. In particular, claim 1 recites "said predicate analysis

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comprising calculating conditional probabilities that relate the customer request to customer goal categories and comparing a maximum conditional probability, obtained from the calculated conditional probabilities, with a minimal set value for the corresponding customer goal category". In this regard, the use of "maximal conditional probabilities" and a "minimal set value" in a "predicate analysis" explicitly encompasses an analysis beyond a mere recognition, i.e., "true" (100%) or "false" (0%), of a word as indicating a mood, e.g., "annoyance or "impatience". Additionally, the use of "maximal conditional probabilities" and a "minimal set value" in a "predicate analysis" explicitly encompasses an analysis beyond a mere recognition, i.e., "true" (100%) or "false" (0%), of a determination of, e.g., an age, sex or language characteristic of a caller. The outstanding Official Action appears to admit that the features originally recited in claims 3 and 4 are not disclosed by BOHACEK. However, the Official Action asserts that such features are disclosed by WHITT.

In this regard, if the "word detector 7" or any other feature of BOHACEK is still asserted by the Examiner to anticipate a "predicate analysis", Applicants respectfully submit that there is no motivation to modify, e.g., the word detector 7, the speaker characteristic unit 8, or the mood logic unit 4, to calculate "conditional probabilities" as is recited in claim 1. In particular, a word detector would presumably either detect (100%) or not detect (0%) a word. Additionally, a speaker characteristic unit operates "to determine... approximate age and sex... potential language preference" of the caller (see column 3, lines 1-9). Moreover, the "mood logic unit" 4 operates to combine "all the available information to determine an

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annoyance level" etc. However, there is no suggestion that the combination or determination is performed according to a "predicate analysis". Moreover, BOHACEK does not disclose or suggest that any of the "word detector", "speaker characteristic unit" or "mood logic unit" calculate "conditional probabilities that relate the customer request to customer goal categories", or obtain a "maximum conditional probability" from "the calculated conditional probabilities".

Additionally, Applicants respectfully submit that WHITT also does not disclose or suggest the above-noted features of, e.g., claims 1 and 34. Rather, WHITT merely discloses, e.g., a "probability distribution function... for the remaining holding time of the customer based on the known attributes" in order to estimate "staffing requirements of the call service center" (see column 3, lines 15-42). Additionally, WHITT merely uses "conditional probability estimations" to determine an expected waiting time for a caller or an expected number of future customers, at column 3, lines 45-60. However, WHITT does not disclose or suggest a "predicate analysis on the customer's request" or assigning calls based on a predicate analysis, let alone assigning a customer request based on an "identified customer goal category" as is recited in claim 1 or based on a "categorized behavioral group" as is recited in claim 34. WHITT also does not disclose or suggest obtaining or comparing a "maximum conditional probability" in any way. Accordingly, Applicants respectfully submit that the above-noted disclosure of WHITT has nothing to do with identifying a "goal for the customer" or a "customer behavior". Furthermore, Applicants respectfully submit that the

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above-noted disclosure of WHITT relates to estimating staffing needs for a call center, and not to individualized call routing of calls, let alone to assigning customer requests to a service center associated with an identified customer goal category and/or associated with a categorized behavioral group.

Furthermore, the estimated "probability distribution function" is not related in any way to the actual content of a "customer request", "customer behavior" or "customer goal categories". Nor is a "predicate analysis" disclosed as the manner in which a "probability distribution function" is obtained in WHITT. Additionally, the applied portion of WHITT does not disclose or suggest any manner of dealing with the content of a "customer request", let alone matching such requests to "customer goal categories" that have a "minimal set value", as is recited in claim 1.

In this regard, Applicants have shown that neither BOHACEK nor WHITT discloses or suggests any form of, e.g., a "predicate analysis", let alone a "predicate analysis" that relates "the customer request to customer goal categories" as is recited in claim 1 or that enables "categorizing... identified customer behavior into one of a plurality of behavioral groups" as is recited in claim 34. Applicants additionally submit that the above-noted features are not disclosed by CARPENTER; nor does the outstanding Official Action even assert that the above-noted features are disclosed by CARPENTER.

Accordingly, for the reasons noted above, Applicants respectfully assert that the invention recited in claim 1 is allowable over the prior art applied by the Examiner.

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Applicants additionally submit that each of claims 25-33 are patentable at least because each depends, directly or indirectly, from an allowable independent claim, as well as for additional reasons related to their own recitations.

Additionally, with respect to claim 34, Applicants submit that the prior art applied by the Examiner does not disclose or suggest "performing a predicate analysis on the customer's request to identify a customer behavior; said predicate analysis being based upon key words used by said customer and specific types of words used by said customer; categorizing the identified customer behavior into one of a plurality of behavioral groups; and assigning the customer request to a service center associated with the behavioral group". In particular, as was noted previously, Applicants respectfully submit that BOHACEK does not disclose or suggest "performing a predicate analysis on the customer's request". Additionally, Applicants submit that BOHACEK does not disclose or suggest "performing a predicate analysis on the customer's request to identify a customer behavior".

In this regard, Applicants respectfully submit that the closely related characteristics of "annoyance or impatience" are just as likely to be associated with a single "special" caller group as with different groups of "a plurality of groups". In any case, BOHACEK does not specify that a "plurality of behavioral groups" exist, let alone the "categorizing the identified customer behavior into one of a plurality of behavioral groups; and "assigning the customer request to a service center associated with the behavioral group". With respect to the latter feature recited in claim 34, BOHACEK also does not appear to disclose or suggest assigning

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a customer request to a "service center associated with the behavioral group". Rather, BOHACEK discloses a "mood logic" unit 4 that computes a parameter that "is then used by the switch to route the call to the most appropriate agent available" (see column 4, lines 24-29).

In this regard, Applicants respectfully submit that the determination of a customer's mood does not correlate to a categorization of a customer's behavior based on a "predicate analysis on the customer's request". Rather, a person in, e.g., a good mood or in a bad mood, may behave by speaking rapidly or pushing touch-tone buttons rapidly. Accordingly, it appears that BOHACEK considers one or more factors to determine a "mood" of the caller. However, there is no indication that BOHACEK uses a "predicate analysis... to identify a customer behavior", as is recited in claim 34. In any case, BOHACEK does not disclose or suggest using a predicate analysis to categorize the identified customer behavior into one of a plurality of behavioral groups and to assign the customer request to a service center associated with the behavioral group. Accordingly, for all the reasons noted above, Applicants respectfully submit that BOHACEK does not disclose or suggest the invention recited in claim 34.

Applicants further submit that the above-noted features that are not disclosed or suggested by BOHACEK, are also not disclosed or suggested by WHITT or CARPENTER. Nor has the Examiner asserted with any particularity that any of the features related to, e.g., a categorization of a customer's behavior, are disclosed or suggested in the applied

references. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 34.

Applicants further submit that claim 35 is patentable over the prior art applied by the Examiner. In this regard, claim 35 recites "performing a verbal style analysis on the customer's request to identify a customer behavior". In contrast, BOHACEK uses, e.g., a "word detector 7" to input information into a "mood logic unit 4". However, a "customer behavior" is not identified by a "verbal style analysis" in BOHACEK. In this regard, BOHACEK appears to utilize some "behavior" of a caller, e.g., pressing a number on the keypad excessively, but such "behavior" is not disclosed or suggested to be identified by a "verbal style analysis".

In any case, claim 35 also recites that "said verbal style analysis comprising performing an analysis with respect to at least one of a number of words used, types of words used, a duration of comment, and a method of contact". In this regard, Applicants respectfully submit that none of the references applied by the Examiner discloses or suggests the use of each of the recited criteria to perform a "verbal style analysis" to "identify a customer behavior for the customer". Applicants further note that the above-noted criteria were formerly recited in claim 16. In this regard, the outstanding Official Action asserted that the features recited in claim 16 were disclosed or suggested in BOHACEK at column 2, lines 54-56. However, Applicants respectfully submit that a "word detector" described at column 2, lines 54-56 of BOHACEK does not explicitly or inherently analyze the "number"

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or "type" of words used, or the "duration of comment". Accordingly, at least for the reasons noted herein, Applicants respectfully submit that the invention recited in claim 35 is allowable over the references applied by the Examiner.

Applicants further submit that each of claims 36-38 is allowable, at least because each depends, directly or indirectly, from an allowable independent claim, as well as for additional reasons related to their own recitations.

Accordingly, for at least the above-noted reasons, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections of claims 1-24, as well as an indication of the allowability of each of the claims pending in the present application.

SUMMARY AND CONCLUSION

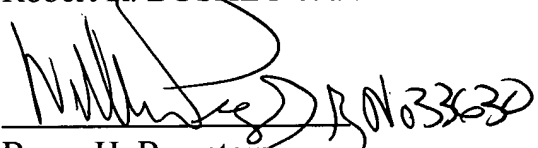
Applicants believe that the present application is in condition for allowance, and respectfully request an indication to that effect. Applicants have amended the claim set to clarify the features of the present invention. Applicants have also discussed the features recited in Applicants' claims and have shown how these features are not taught, disclosed nor rendered obvious by the references applied by the Examiner.

Any amendments to the claims, or addition or cancellation of claims, which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

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